

LHC Cryogenic Availability

Fault recording workflow proposal

LHC cryogenics operation section

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Sample event description

Quench in 31R8 of April 28th

Proposal for adaptation of the current workflow

“Editable by CRG shifter” only during the time the link with the AFT is not active

“Always editable by CRG shifter”

“Populating AFT” (implementing a comment in the Activity Window of the AFT event)

“Populated from AFT”: not editable by the CRG shifter

To be removed from the CRG logbook (useless)

To be renamed:

- Cryo Ready Loss Start => “Cryo Maintain (CM) Lost”
- Cryo Ready Loss Mid => “Cryo Maintain (CM) Back”
- Cryo Ready Loss End => “Cryo Start (CS) Back”
- Cryo Ready loss duration => “CM lost to CS back”
- Cryo Ready Loss mid duration => “CM lost to CM back”

Proposal for adaptation of the current workflow

The screenshot displays the EAM Logbook interface for a fault recording workflow. The interface is divided into several sections:

- Basic Information:** System (Cryogenics > Users > Quench), Effective Duration (9h 8min 10s), Blocking Duration (7h 56min 1s), Description (Cryo recovery after Quench: Quench of 600A circuit RQT12.R5B1 in StableBeams with 2200b. Then just before ramp down there was a quench in RB.A78 causing long cryo recovery.), Display Label, Access Needed (Yes), Labels, Impact (RP Needed Yes, Turnaround Penalty in Seconds 1319), RZE Status (Not RZE related), Fill No (9570), Beam Mode (STABLE), Time in Fill (12h 7min 28s), Time in Fill (ms) (43648334), Time in Beam Mode (8h 26min 51s), Time in Beam Mode (ms) (39531065), and Injection Scheme (25ns_2211b_2198_1854_1974_108bpl_27inj_3INDIVs).
- Faulty Elements:** 1. Faulty Elements, 2. Relations (is parent of: LHC Precycle (1h 12min 9s) OP Ended; is child of: LHC Magnet circuits > Training Quench (1s) OP Ended).
- Activity:** 12 Activity.
- External Linked Systems:** E-Logbook, Infor EAM, Post Mortem.
- EAM Logbook Header:** + New log, CRG Logbook LHC, LDELPRAT.
- Log 119461:** SAVE, NEW, DELETE, RELOAD, EMAIL, PRINT, CLONE, HISTORY, GENERATE URL.
- Base Log Details:** Description (Quench 31R8), Nature (Fault), Subtype (User failure), Source (Beep), Status (A - Active), Created By (JPEWS), Date Created (28-Apr-2024 19:12), Updated By (NVALETTE), Date Updated (29-Apr-2024 02:27), Event Start Date (28-Aug-2024 17:01), Event End Date (dd-mmm-yyyy hh:mm), Intervention (checkbox).
- Intervention Activity:** Section for recording intervention details.
- Cryo Loss Capture:** Cryo ready loss (checkbox checked), Cryo ready nature (CRYO Maintain), AFT Fault Type (USERS-QUENCH), Cryo Ready Loss Start (28-Apr-2024 16:51), Cryo Ready Loss End (29-Apr-2024 01:00), Cryo Ready Loss Mid (dd-mmm-yyyy hh:mm), Cryo ready loss duration (8h 9m), Cryo ready loss mid duration, Machine/Load Status, and Category.
- Event Details:** Quench 31L8 during LHC RAMPDOWN: TTmax - 25.95K, PTmax - 17.49bar, Current - 8973A. At 17h30, BE phoned to discuss Cell 31L8's neighbouring Cell 33L8, which has a pierced bayonet. 33L8_CV910 comment states that there is 'Liquid in bayonet when valve passes 11-12%'. After discussion with BE, the decision was made to cool Cell 33L8 through conduction with outer Cells 31R7 / 31L8 and keep OHL at 11%. (65 words)
- CRYO Position Capture:** Site (Q08L - LHC P8), Subsystem (QA8_SECT_78 - Sector 7-8), Equipment, Equipment Class.
- EDMS DOCUMENTS:** Section for linking documents.
- LINKS, COMMENTS, PARENT EVENTS, FOLLOW UPS, CONNECTIONS:** Additional sections for managing related information.

